This paper investigates the relevance of verbal inflection to the verb second (V2) phenomenon in the history of English. Focusing on the close connection of V2 with the presence of a distinctive number agreement morpheme on verbs, I claim that in early English, the person and number features are located on the categories Fin and low-Top, respectively, in the fine CP structure advocated by Rizzi (1997), and that the finite verb raises to Fin. Under the proposed mechanism, the loss of V2 in English is considered a natural consequence of the decline of verbal inflection, which forces the person and number features to be jointly carried by Fin, and the finite verb to raise no higher than to T.*

Keywords: verb second, verbal inflection, Rich Agreement Hypothesis, fine CP structure, historical change

1. Introduction

Since the pioneering work by Emonds (1978), it has been generally assumed in the generative literature that the relative position of a finite verb to a VP adverb reflects the presence or absence of verb movement. According to this view, the word order in which a finite verb appears to the left of a VP adverb, as in (1), is derived through V-to-T movement.

(1) Jean embrasse souvent Marie.
Jean kisses often Marie
‘Jean often kisses Marie.’ (Pollock (1989: 367))

* This paper is a substantially revised and extended version of Nawata (2003a, b, 2004). I appreciate the stylistic changes which were suggested by the Young Researcher Award Selection Committee. I also appreciate the hints made by the same Committee which have prompted me to clarify some of the controversial points. All remaining inadequacies are mine. This work was supported in part by Grant-in-Aid for Young Scientists (B) from The Ministry of Education, Culture, Sports, Science and Technology, Grant No. 19720113, and by a grant for young researchers from Shimane University.
Subsequent comparative syntactic studies, most notably Pollock (1989), revealed that languages with rich inflectional morphology on verbs exhibit V-to-T movement. Following Bobaljik (2002), we shall refer to the hypothesis that rich inflectional morphology drives verb movement in some way or other as the Rich Agreement Hypothesis (RAH).

Although studies on the RAH have been mainly concerned with V-to-T movement, the literature hints that another well-known verb movement, i.e. verb second (V2) movement observed in Germanic languages, is also sensitive to rich inflectional morphology (Roberts (1993), Fischer et al. (2000), Haeberli (2002) among others). However, in contrast to the case of V-to-T movement, attempts to demonstrate the validity of the RAH concerning V2 have been challenged by the following facts: (i) although Present-day English (PE) has virtually lost verbal agreement, it still preserves residual V2 phenomena such as wh-interrogatives and negative inversion, (ii) V2 is essentially a root phenomenon that is not observed in embedded clauses, and (iii) mainland Scandinavian languages exhibit productive V2 despite their flat verbal agreement (Vikner (1995) among others). These facts seem to suggest that the richness of verbal inflectional morphology is simply irrelevant to the availability of V2.

The aim of this paper is to demonstrate that the above facts notwithstanding, verbal inflectional morphology influences V2 movement in much the same way that it influences V-to-T movement and to propose a mechanism to derive the word order patterns of V2 following the RAH. Specifically, I will develop a new theoretical explanation for the descriptive generalization in (2) drawn by Nawata (2003a, b, 2004).

(2) If a language has a distinctive number agreement morpheme, it exhibits the V2 word order.

For this purpose, I will shed light on the historical changes in English. Since English is the only Germanic language that underwent both the decline of verbal inflection and the loss of V2, it is expected that an investigation of its historical changes will contribute to the explication of the relevance of verbal inflection to V2 movement.

1 Throughout this paper, we will confine our discussion to V2 that involves verb movement into the C-domain. The term “residual V2” is also used in this sense; thus, it does not include inversion constructions in which the verb raises only to T, such as locative inversion (Levin and Rappaport Hovav (1995) among others). In this connection, we will employ the cover term “V2 movement” to refer to the relevant head movement into the C-domain. We will explicate specific landing sites of the V2 movement in the following discussion.
This paper is organized as follows. Section 2 introduces a structural approach to the RAH and addresses the issues to be considered. Section 3 reviews the basic properties of V2 in Old English (OE) and Middle English (ME) and the relation between the availability of V2 and the richness of verbal inflectional morphology. Section 4 makes proposals concerning the phrase structure of early English and the mechanism for realizing verbal inflectional morphology, in order to provide an explanation for the generalization in (2). Section 5 offers solutions to problems (i)–(iii) in light of our proposals, and section 6 contains concluding remarks.

2. The Rich Agreement Hypothesis

Early studies based on the RAH sought to define the richness of verbal inflection that drives V-to-T movement by comparing various individual languages. However, regardless of the precise definition of rich agreement, the RAH is a mere descriptive generalization as it stands. A more important issue to be addressed pertains to why a language with rich verbal inflectional morphology exhibits V-to-T movement to begin with.

Bobaljik (2002) provides an explanation for this puzzle by mediating between verbal inflection and V-to-T movement through a hierarchical clause structure. He observes that the number of morphemes that appear in a given verbal inflectional paradigm is not relevant to V-to-T movement; rather, he claims that it is the number of morphemes that can be borne by a given verbal root at a time that is important with respect to V-to-T movement and provides the following definition of rich agreement:

(3) Verbal inflection is rich iff finite verbs may bear multiple distinct inflectional morphemes. (Bobaljik (2002: 134))

According to this definition, verbal inflection in which tense and agreement are expressed by distinct morphemes is judged to be richer than that where tense and agreement are expressed by a single morpheme.

Then, Bobaljik argues that these inflectional patterns stem from different syntactic structures. Specifically, it is claimed that languages with a single inflectional morpheme and those with multiple morphemes have clause structures in (4a, b), respectively. (Although Bobaljik refers to the non-split inflectional category as Infl, we will employ the category T(ense) only for expository purposes.)

2 For attempts to formulate rich agreement in the early studies on the RAH, see Rohrbacher (1999), Vikner (1997) and the references cited therein.
The relation between these structures and the (im)possibility of V-to-T movement is explained as follows. Bobaljik crucially assumes that the requisite local relation for checking verbal features is a sisterhood relation between an inflectional head and (a projection of) the verb. Then, if a language has the simplex clause structure shown in (4a), the verb and its inflection already have a sufficiently local relation. Thus, it is not necessary for the verb to raise to T; actually, V-to-T movement is prohibited due to Last Resort, which states that a movement of any sort must be motivated by the necessity of feature-checking. In (4b), on the other hand, Agr cannot check the agreement feature on the verb because these two items are separated by the intervening T head. Thus, Last Resort mandates that V raise to T in order to establish a local sisterhood relation with Agr.3

An important insight that underlies Bobaljik’s approach to the RAH is that rich verbal inflection and obligatory V-to-T movement are both reduced to the complexity of the clause structure. We consider this approach to be basically on the right track; however, some new issues arise when we extend the domain of empirical investigation within the recent theoretical framework.

Our main concern is whether this approach works for V2 movement as well. If the richness of verbal inflectional morphology affects the possibility of V2, as suggested by Roberts (1993), Fischer et al. (2000), and Haeberli (2002), among others, it is necessary to explicate to what extent verbal inflection should be rich in order to yield V2 and what the relevant clause structure and the mechanism of derivation are that are at work for the V2 movement. We should also answer the following questions that

3 Bobaljik argues that an advantage of his structural approach to the RAH is that it can deal with minor cases of languages that exhibit V-to-T movement despite their flat agreement morphology, e.g. Faroese, the Kronoby dialect of Swedish, and the Tromsø dialect of Norwegian, by considering the possibility that Agr hosts a null morpheme. The same reasoning would apply in our model developed below, although we will not go into details.
apparently hinder us from applying the RAH to V2: why PE, in which verbal agreement is almost lost, exhibits residual V2 phenomena in certain specific constructions such as interrogatives, why V2 is generally limited to root clauses, and why mainland Scandinavian languages including Swedish, Norwegian, and Danish preserve productive V2 despite their lack of verbal agreement (Vikner (1995) among others).

In addition, certain theoretical assumptions in Bobaljik’s approach cannot be kept intact in light of the recent theoretical model advocated by Chomsky (2000, 2001) and his subsequent works. Therein, the mechanism of feature-checking is largely refined in a manner consistent with the strong minimalist thesis; more specifically, checking is implemented via the operation Agree, which is established between a probe and a goal. The relevant definitions are provided below:

(5) a. Agree establishes a relation (agreement, Case checking) between a lexical item \( \alpha \) and a feature \( F \) in its domain.

(Chomsky (2000: 101))

b. The domain of a probe \( P \) is the sister of \( P \). (ibid.: 122)

The definition in (5b) indicates that there is no sisterhood requirement imposed on the relation between a probe and a goal, as long as the latter is included in the sister of, i.e. c-commanded by, the former. This raises a rather difficult problem for Bobaljik’s analysis of V-to-T movement, which crucially attributes the trigger of verb movement to the locality condition on feature-checking. Additionally, it should be noted that in the split-Infl structure shown in (4b), the category Agr is posited as an independent functional head that carries an agreement feature. However, Agr is eliminated from UG in the recent model on the grounds that categories like Agr that receive no interpretation at the C-I interface are dubious (Chomsky (1995)). This being the case, we should also reconsider the status of the category labeled Agr.

3. Facts to Be Explained

This section reviews the descriptive facts that are to be explained in section 4. Section 3.1 summarizes the basic properties of V2 in OE and Early Middle English (EME). Section 3.2 then examines individual texts of diverse periods and dialects in order to establish the relation between rich verbal inflectional morphology and V2. In this section, we limit our discussion to the V2 in main clauses, deferring the problem of the verb-final order in embedded clauses to section 5.1.
3.1. Basic Patterns of V2 in OE and EME

The main-clause word order in OE and EME is somewhat complicated as compared to that in modern V2 languages such as German and Dutch. This is because the word order in OE and EME is dependent on two factors that work together: whether or not the sentence-initial element is an operator and whether the subject is a noun phrase or a pronoun.

When the sentence-initial element is the subject, it is followed by the finite verb.4

(6) Subject-V
Se Hælend wearð þa gelomlice ætiwed his leornung-cnihtum
the Lord was then frequently shown his disciples-Dat
‘The Lord then frequently appeared to his disciples’

(ÆCHom I, 15.220.21)

This is a type of V2 word order where the subject itself is interpreted as a topic.

Next, we shall consider the cases where the sentence-initial position is occupied either by a wh-element, the negative particle ne ‘not,’ or the conjunctive adverb þa ‘then.’ These elements trigger verb movement across the subject irrespective of whether it is a noun phrase or a pronoun. Thus, we obtain the obligatory V2 word order, as illustrated in (7)–(9).

(7) Wh-V-Subject NP/Subject Pronoun
a. Hwi wolde God swa lytles þinges him forwyrnan?
  why would God so small thing him deny
  ‘Why should God deny him such a small thing?’
  (ÆCHom I, 1.14.2)

b. for hwam noldest þu ðe sylfe me gecyðan
  for what not-wanted you you self me make-known
  þæt …
  ‘wherefore would you not want to make known to me your-self that …’
  (LS7 (Euphr) 305)

(8) Ne-V-Subject NP/Subject Pronoun
a. Ne sende se deofol ða fyr of heofenum, þeah
  not sent the devil then fire from heaven though
  þe hit ufan come
  that it from-above came

4 The examples in this section are all cited from Fischer et al. (2000).
‘The devil did not send fire from heaven, though it came from above’  
\(\textit{ÆCHom I (Pref) 6.13}\)

b. Ne sceal he naht unaliefedes don 
not shall he nothing unlawful do 
‘He shall not do anything unlawful’  
\(\textit{CP 10.61.14}\)

(9)  
\(\textit{pa-V-Subject NP/Subject Pronoun}\)

a. Þa wæs þæt folc þæs micclan welan 
then was the people the great prosperity-Gen 
ungemetlice brucende … 
excessively partaking 
‘Then the people were partaking excessively of the great prosperity.’  
\(\textit{Or 1.23.3}\)

b. Þa foron hie mid þrim scipum ut 
then sailed they with three ships out 
‘Then they sailed out with three ships’  
\(\textit{ChronA (Plummer) 897.30}\)

In (7) and (8), the \textit{wh}-elements and the negative particle \textit{ne} work as logical operators that take scope over the sentences. If we assume that certain operator movement is involved in the \textit{pa}-initial sentences in (9) as well (see the discussion in section 4.1), the above examples in (7)–(9) can be subsumed under the rubric of the operator-initial construction.

When elements other than operators appear in the sentence-initial position as a topic, the word order is sensitive to whether the subject is a noun phrase or a pronoun. If it is a noun phrase, it is preceded by the finite verb, so that the canonical V2 order is derived. On the other hand, if the subject is a pronoun, it is followed by the finite verb. This yields an apparent verb third (V3) order. The contrast is illustrated by the examples in (10) and (11) below:

(10)  
\(\textit{Topic-V-Subject NP}\)

On twam þingum hæfde God þæs mannes sawle gegodod 
in two things had God the man’s soul endowed 
‘With two things God had endowed man’s soul’  
\(\textit{ÆCHom I, 1.20.1}\)

(11)  
\(\textit{Topic-Subject Pronoun-V}\)

Be ðæm we magon suiðe swutule oncnawan ðæt … 
by that we may very clearly perceive that 
‘By that, we may perceive very clearly that …’  
\(\textit{CP 26.181.16}\)

Although the topic-V-subject order in (10) is unmarked when the subject is a noun phrase, the word order illustrated in (12), where the finite verb fol-
allows the subject, also appeared sporadically.

(12) Topic-Subject NP-V

Nu ealle ðas ðing synd mid anum naman genemnode,
now all these things are with one name named
gesceaf.

‘Now all these things are called with one name: creature.’

(AECHom I, 20.276.10)

This is another instance of the surface V3 order.

The word order patterns reviewed in (6)–(12) remained stable in OE and EME; however, the V2 property subsequently began to decline in Late Middle English (LME) (Fischer et al. (2000)). At the same time, it is also notable that of the constructions mentioned above, only the topic-initial construction with a subject NP in (10) underwent a visible word order change in the history of English. The conjunctive adverb þa in (9) was lost in ME, while the other patterns still survive in PE, at least at the surface word order level. The subject-initial V2 order in (6) and the surface V3 orders in (11) and (12) are commonplace, and when a wh-phrase or a negative element appears in the sentence-initial position, as in (7) and (8), subject-auxiliary inversion is obligatorily triggered. These wh-inversion and negative inversion constructions are known as residual V2 in PE. Therefore, we should focus on the topic-V-subject NP order to investigate the loss of V2 in English.

3.2. Rich Agreement for V2

ME, the so-called “period of leveled inflection,” experienced a catastrophic loss of verbal agreement morphemes. Of essential concern to the present discussion is the loss of the plural morphemes -eþ and -en. According to Lass (2006), the use of these morphemes began to decline in the fourteenth century and they were almost completely lost at the beginning of the sixteenth century. As an illustration, it is reported that in Chaucer’s Treatise on the Astrolabe, written in 1381, 84% of the verbs preserve the plural -en and only 16% of them exhibit the zero form, whereas in Caxton’s Prologues, which was written in the 1470s, the rate of the use of -en decreases to 28% (ibid.: 78).

Interestingly enough, the period during which the loss of the plural agreement morphemes occurred overlaps that during which the V2 order declined. Fischer et al. (2000: 133), on the basis of the survey by Jacobsson (1951), argue that the grammatical decline of V2 occurred in the fifteenth
CLAUSAL ARCHITECTURE AND INFLECTIONAL PARADIGM

To confirm that a relation holds between these two changes, Nawata (2003a, b, 2004) examines if the productivity of V2 correlates with the presence of the plural agreement morphemes in individual texts in ME and Early Modern English (EModE). The texts under investigation are Ayenbite of Inwyt, Piers Plowman, Canterbury Tales, Sir Gawain and the Green Knight, Mandeville’s Travels, Paston Letters, Richard Rolle’s Prose Treatises, Gregory’s Chronicle of London, Caxton’s Prologues and Epilogues, and Utopia. The relevant dates, dialects, and productivity with respect to V2 are summarized as follows:

(13) V2 and non-V2 texts in ME

<table>
<thead>
<tr>
<th>Text</th>
<th>Date</th>
<th>Dialect</th>
<th>Topic-V-Subject NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ayenbite of Inwyt</td>
<td>1340</td>
<td>Kentish</td>
<td>√</td>
</tr>
<tr>
<td>Piers Plowman</td>
<td>c1370-1380</td>
<td>Southern</td>
<td>√</td>
</tr>
<tr>
<td>Canterbury Tales</td>
<td>c1387-1395</td>
<td>East Midland</td>
<td>√</td>
</tr>
<tr>
<td>Gawain</td>
<td>c1400 (?c1390)</td>
<td>West Midland</td>
<td>√</td>
</tr>
<tr>
<td>Mandeville’s Travels</td>
<td>?a1425 (c1400)</td>
<td>East Midland</td>
<td>*</td>
</tr>
<tr>
<td>Paston Letters</td>
<td>1422-1509</td>
<td>East Midland</td>
<td>*</td>
</tr>
<tr>
<td>Richard Rolle</td>
<td>c1440 (a1349)</td>
<td>Northern</td>
<td>*</td>
</tr>
<tr>
<td>Gregory’s Chronicle</td>
<td>c1475</td>
<td>Southern</td>
<td>*</td>
</tr>
<tr>
<td>Caxton</td>
<td>1477-1484</td>
<td>East Midland</td>
<td>*</td>
</tr>
<tr>
<td>Utopia</td>
<td>1516</td>
<td>(Modern English)</td>
<td>*</td>
</tr>
</tbody>
</table>

For each text, he extracts 100 examples of topic-initial sentences, including 50 examples with subject NPs and 50 examples with subject pronouns, and counts the tokens of the topic-V-subject order and the topic-subject-V order to estimate the frequencies of these patterns. The check mark indicates that the topic-V-subject order is dominant with subject NPs, whereas the asterisk means that the topic-subject-V order is the norm for both subject NPs and subject pronouns.\(^5\)

\(^5\) The rates of the topic-V-subject NP order in the texts examined are as follows: 72% (Ayenbite of Inwyt), 66% (Piers Plowman), 68% (Canterbury Tales), 66% (Gawain), 66% (Mandeville’s Travels), 16% (Paston Letters), 24% (Richard Rolle), 32% (Gregory’s Chronicle), 22% (Caxton), 14% (Utopia). See Nawata (2003a, b, 2004) for specific statistical figures (except for Caxton, which is newly added for the present paper). The reader is also referred to Kroch and Taylor (1997) for a more detailed survey of Ayenbite of Inwyt. For the present purpose, the first five texts are grouped into V2 texts and the last five ones into non-V2 texts. Potential problems arise with respect to (a) the topic-subject NP-V order in the V2 texts and (b) the topic-subject NP order in the non-V2 texts. Case (a) is not so serious, because topic-initial sentences with subject NPs in OE and EME generally exhibit the apparent V3 order as a marked option, as illustrated in
Nawata then investigates the relation between the availability of V2 and the richness of verbal inflections in these texts. The table in (14) summarizes the typical inflectional paradigms of verbs employed in the texts where V2 is productive in the relevant sense. (The question mark indicates that the relevant inflectional forms are not found in his survey.)

(14) Verbal inflectional paradigms of V2 texts

<table>
<thead>
<tr>
<th></th>
<th>Ayenbite</th>
<th>Piers</th>
<th>Canterbury</th>
<th>Gawain</th>
<th>Mandeville</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pres.</td>
<td>past</td>
<td>pres.</td>
<td>past</td>
<td>pres.</td>
</tr>
<tr>
<td>sg. 1</td>
<td>-e/-i</td>
<td>-de</td>
<td>-(e)</td>
<td>-d</td>
<td>-(e)</td>
</tr>
<tr>
<td>2</td>
<td>-(e)st</td>
<td>-dest</td>
<td>-st</td>
<td>-dest</td>
<td>-e3/-s/-t3</td>
</tr>
<tr>
<td>3</td>
<td>-b</td>
<td>-de</td>
<td>-th</td>
<td>-d</td>
<td>-d(e)</td>
</tr>
<tr>
<td>pl. 1</td>
<td>-eþ</td>
<td>-de(n)</td>
<td>-en</td>
<td>-d(en)</td>
<td>-en</td>
</tr>
<tr>
<td>2</td>
<td>-eþ</td>
<td>-de(n)</td>
<td>-en</td>
<td>-d(en)</td>
<td>-en</td>
</tr>
<tr>
<td>3</td>
<td>-eþ</td>
<td>-de(n)</td>
<td>-en</td>
<td>-d(en)</td>
<td>-en</td>
</tr>
</tbody>
</table>

Crucially, all the texts preserve distinctive plural agreement morphemes (-eþ and -en) in the both present and past tenses. On the other hand, the typical

(12). For our analysis of this order, see section 4.1. Case (b) needs more careful scrutiny, especially concerning the relatively high frequency of V2 in Richard Rolle, *Gregory’s Chronicle*, and Caxton. We will return to Richard Rolle in note 21. As for *Gregory’s Chronicle*, the majority of the V2 examples are existential or presentational sentences of the type in (i).

(i) Ande the same yere was a grete devysyon in his londe by twyne the kynge ande his lordys.

‘And the same year, there was a great division in this land between the king and his lordes.’

(*Gregory* 61.1–2)

It seems reasonable to suppose that (i) includes expletive pro and should be grouped together with the *there*-construction in PE. Then, examples like (i) are not counted as true V2 examples (see also note 1). As for Caxton, 10 out of 11 examples of V2 have the form “Thus endeth…” as in (ii).

(ii) Thus endeth the lyf of saynt George.

‘Thus ends the life of saint George

(*Caxton* 75.12–13)

Thus, the high frequency of the topic-V-subject NP order is due to this fixed expression. Incidentally, as an anonymous reviewer points out, the word order in verse texts (*Piers Plowman*, *Canterbury Tales*, and *Gawain*) may be influenced by metrical requirements. However, this will not affect our overall conclusion, because for the V2 strategy to be available to satisfy the metrical requirements, the grammars of individual authors should allow V2 in the first place.
Inflectional paradigms of verbs in non-V2 texts are represented in the table below.

(15) Verbal inflectional paradigms of non-V2 texts

<table>
<thead>
<tr>
<th>Paston</th>
<th>Rolle</th>
<th>Gregory’s Chron.</th>
<th>Caxton</th>
<th>Utopia</th>
</tr>
</thead>
<tbody>
<tr>
<td>pres.</td>
<td>past</td>
<td>pres.</td>
<td>past</td>
<td>pres.</td>
</tr>
<tr>
<td>sg. 1</td>
<td>-(e)</td>
<td>-d(e)</td>
<td>-(e)</td>
<td>-d(e)</td>
</tr>
<tr>
<td>2</td>
<td>-(e)</td>
<td>-d(e)</td>
<td>ste</td>
<td>-d(e)</td>
</tr>
<tr>
<td>3</td>
<td>-th</td>
<td>-d(e)</td>
<td>-s</td>
<td>-d(e)</td>
</tr>
<tr>
<td>pl. 1</td>
<td>-(e)</td>
<td>-d(e)</td>
<td>-e</td>
<td>-d(e)</td>
</tr>
<tr>
<td>2</td>
<td>-(e)</td>
<td>-d(e)</td>
<td>-e</td>
<td>-d(e)</td>
</tr>
<tr>
<td>3</td>
<td>-(e)</td>
<td>-d(e)</td>
<td>-e</td>
<td>-d(e)</td>
</tr>
</tbody>
</table>

It is obvious from this table that the plural agreement morphemes have declined to reduced forms (-e or zero). Although plural agreement is not completely flat owing to the presence of -e, it cannot be regarded as a distinctive plural morpheme since the same form appears in the singular slots as well.

Thus, it is possible to conclude that the plural agreement morphemes and the syntactic V2 declined during the same period in the chronological table; the correlation between them is confirmed in individual texts as well. This is of particular significance for the present discussion because it leads us to suspect that both these phenomena reflect the internal grammars of individual authors. From these findings, Nawata draws the generalization in (2), repeated here as (16).

(16) If a language has a distinctive number agreement morpheme, it exhibits the V2 word order.

Before proceeding to our proposal and analysis in the next section, some caveats are worth noting at this point. First, this generalization only has a one-way implication: the presence of a distinctive number agreement morpheme implies syntactic V2 movement, but not vice versa. This is evident from the facts concerning residual V2 in PE and mainland Scandinavian V2, both of which have flat agreement. Second, the facts concerning word order patterns in embedded clauses might even cast doubt on the descriptive adequacy of this generalization. We will turn to these problems in section 5; for now, (16) suffices for our purpose.
4. Proposal and Analysis

This section offers an explanation for the facts reviewed above. The analytical devices adopted here are the fine CP structure developed by Rizzi (1997) and the theoretical framework of Distributed Morphology (DM) (Halle and Marantz (1993) among others). Section 4.1 demonstrates that the word order patterns in early English are naturally accounted for given the fine CP structure. Further, section 4.2 argues that with a slight modification of Bobaljik’s (2002) approach, the correlation between the loss of V2 and the decline of verbal inflectional morphology in the history of English is appropriately dealt with by the RAH.

4.1. Clausal Architecture

Syntactic research under the cartographic project has revealed that the composition of functional categories is far more complex than it was previously assumed to be. Among others, Rizzi (1997), mainly based on Italian data, proposes that the traditional CP domain should be decomposed into a fine structure that consists of Force, Top(ic), Foc(us), and Fin(iteness); accordingly, the left periphery of the phrase structure is represented as follows:

\[
\text{(17)} \quad \left[ \text{ForceP Force} \left[ \text{TopP Top} \left[ \text{FocP Foc} \left[ \text{TopP Top} \left[ \text{FinP Fin} \left[ \text{TP T} \right] \right] \right] \right] \right] \right]
\]

These functional categories, unlike Agr, are theoretically motivated to the extent that they are responsible for (mainly discourse-related) interpretations at the C-I interface. If this highly articulated structure is part of UG, then it is the case that it is applicable even to languages that are chronologically and genealogically distant from those originally explored by Rizzi. Thus, I propose that the structure of the left periphery of OE and EME is delineated as in (18).
(18) The structure of the left periphery in OE/EME

Subjects and other sentence-initial elements must appear in their designated Specs. We shall assume the following. First, scope-taking focus operators including wh-elements, the negative particle ne, and a certain type of null operator occur in Spec-Foc. Second, topics appear in Specs of either upper Top (notated as Top\textsuperscript{u}) or lower Top (notated as Top\textsuperscript{l}). Of these two topic positions, only Spec-Top\textsuperscript{u} can accommodate conjunctive adverbials, although it can host other ordinary topic elements as well. Since þa is an inherent conjunctive adverb, it occupies this position. Third, subjects are located either in Spec-T or Spec-Top\textsuperscript{l}. Spec-T is reserved for subject NPs. On the other hand, subject pronouns, being interpreted as old information and hence as a type of topic, appear in Spec-Top\textsuperscript{l}. Subject NPs are also eligible for occupying Spec-Top\textsuperscript{l} if they receive topic interpretations.\footnote{Hulk and van Kemenade (1997) and van Kemenade (1999) suggest that there is a functional category immediately above TP that licenses negative adverbs like na in its Spec (for an example, see (8b) in the text). They label the relevant category Neg, but given our structure in (18), it might as well be the case that Fin encodes feature values concerning both finiteness and negation, licensing negative adverbs in its Spec. If this speculation is on the right track, all the functional categories posited in (18) will have their designated Spec elements.}

As for the position of the finite verb, we assume that the following two options are available:
(19) a. If Spec-Foc is occupied by wh/ne/Op, the finite verb raises to Foc.
b. Otherwise, the finite verb raises to Fin.
Of these options, (19a) follows from the Focus Criterion in (20).

(20) The Focus Criterion
a. A focus operator must be in Spec-head agreement with a [+F] X^0.
b. A [+F] X^0 must be in Spec-head agreement with a focus operator.

This is an extension of Rizzi’s (1996) Wh-Criterion for focus constructions in general (see Rizzi (1997)). This criterion essentially requires some focus-bearing element and its licenser to be in a Spec-head relation. Following Rizzi’s (1996) analysis of T-to-C movement in root interrogatives, we shall assume that in main clauses, the finite T is specified as [+F]. Then, when a wh-element, the negative particle ne, or a null operator appears in Spec-Foc, the finite verb must raise to Foc in order to satisfy the second clause of the Focus Criterion. With respect to the option in (19b), I will demonstrate in section 4.2 that the verb movement in question is derived from more basic principles that govern the derivation of verbal inflection. At this point, it suffices to assume that (19b) is valid.

With the phrase structure in (18) and the loci of the finite verb in (19) in mind, we shall examine the word order patterns reviewed in section 3.1 in turn. When a wh-element or the negative particle ne appears in Spec-Foc, the finite verb raises to the head Foc in accordance with (19a). Since this position is higher than both Spec-Top^1 and Spec-T, the verb precedes the subject irrespective of whether it is a noun phrase or a pronoun. The relevant structures are represented as follows:

---

7 The Focus Criterion must be satisfied at S-structure in the traditional sense. If there is no movement in covert syntax (Chomsky (2000, 2001)), criteria of this sort would be conceived as an output condition at the C-I interface. Here, we will leave the question open whether Rizzian criteria are independent principles or should be derived from other more atomic notions such as the EPP.

8 Focalization in Italian does not trigger overt verb movement. Rizzi (1997) argues that the location of the [+F] feature varies across languages; in Italian, [+F] is inherently possessed by the Foc head, so that no movement of an inflectional head is required. The locus of [+F] may even vary within a given language, as evidenced by PE, where wh- and negative elements in Spec-Foc require T-to-Foc movement, but other sentence-initial focus elements do not.
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(21) *Wh/Ne-V-Subject NP (cf. (7a), (8a))
[TopP Top[u] [FocP wh/ne V [TopP Top[l] [FinP Fin [TP Subj. NP T]]]]]

(22) *Wh/Ne-V-Subject Pronoun (cf. (7b), (8b))
[TopP Top[u] [FocP wh/ne V [TopP Subj. Pron. Top[l] [FinP Fin [TP T]]]]]

The conjunctive adverb *pa triggers the same word order as the *wh/ne-initial constructions, although *pa itself is not a focus element. Then, we shall assume that the *pa-initial construction is derived via a complex chain formation involving base-generation of *pa in Spec-Top[u] with concomitant null operator movement to Spec-Foc.9 This null operator takes scope over its c-command domain, and owing to its focal nature, marks the residual part following *pa as new information. As a type of focus operator, it also motivates verb movement. The relevant structures can be delineated as in (23) and (24).

(23) *Pa-V-Subject NP (cf. (9a))
[TopP *pa Top[u] [FocP Op V [TopP Top[l] [FinP Fin [TP Subj. NP T]]]]]

(24) *Pa-V-Subject Pronoun (cf. (9b))
[TopP *pa Top[u] [FocP Op V [TopP Subj. Pron. Top[l] [FinP Fin [TP T]]]]]

Both derivations result in the word order where the finite verb precedes the subject.10

Next, we shall consider cases where elements other than *wh/ne/*pa appear as a topic. In such cases, the finite verb raises to the head no higher than Fin in accordance with (19b). Since this position c-commands Spec-T and is c-commanded by Spec-Top[l], the word order varies depending on the type of the subject. If the subject is a noun phrase in Spec-T, the topic-V-subject order is obtained, as illustrated in (25). On the other hand, if the subject is a pronoun in Spec-Top[l], the topic is forced to occupy Spec-Top[u], so that the resultant order is topic-subject-V, as in (26).

9 Since *pa is a temporal adverb, the most plausible base-generation site of the corresponding null operator is the TP-adjoined position.

10 We assume that the finite verb raises to Foc via Top[l] in accordance with the Head Movement Constraint (HMC). However, Rizzi (1997) and Haegeman (2000) refer to the incompatibility of the lower topic with subject-auxiliary inversion as illustrated in (i) to argue that successive cyclic verb movement into Foc via Top[l] is banned.

(i) *On no account will during my sabbatical I read e-mail. (Haegeman (2000: 27))
The ungrammaticality of (i) may raise a problem for our account of the *wh/ne/*pa-V-subject pronoun order in (22) and (24), since it seems as if the verb movement in question leads to the violation of either the HMC or the ban on verb movement via Top[l]. We will turn to this issue in note 18. Thanks are due to an anonymous reviewer for bringing my attention to this point.
(25) Topic-V-Subject NP\textsuperscript{11} (cf. (10))
\[
[\text{TopP} \text{Top}^u \text{[FocP} \text{Foc} \text{[TopP Topic Top}^l \text{[FinP V [TP Subj. NP T]]]}])
\]

(26) Topic-Subject Pronoun-V (cf. (11))
\[
[\text{TopP Topic} \text{Top}^u \text{[FocP Foc} \text{[TopP Subj. Pron. Top}^l \text{[FinP V [TP T]]]}])
\]

Importantly, Spec-Top\textsuperscript{1} is not exclusively used for non-subject topics and subject pronouns; it is also available for subject NPs if they receive topic interpretations. When a subject NP serves as the topic of the sentence, it undergoes topicalization from Spec-T to Spec-Top\textsuperscript{1}, yielding the subject-V order in (27). Moreover, if an additional topic appears in Spec-Top\textsuperscript{u}, this results in the topic-subject-V order in (28).

(27) Subject NP-V (cf. (6))
\[
[\text{TopP} \text{Top}^u \text{[FocP Foc} \text{[TopP Subj. NP Top}^l \text{[FinP V [TP T]]]}])
\]

(28) Topic-Subject NP-V (cf. (12))
\[
[\text{TopP Topic} \text{Top}^u \text{[FocP Foc} \text{[TopP Subj. NP Top}^l \text{[FinP V [TP T]]]}])
\]

As mentioned in section 3.1, in OE and EME, the topic-subject-V order with a subject NP is relatively marked as compared to the topic-V-subject order illustrated in (25). Its marked status could possibly be attributed to the difficulty in interpreting the subject NP as a “second topic” when the sentence already has a topic in the sentence-initial position, although we should leave a more precise analysis for future research. What is relevant to the present concern is that our phrase structure can accommodate a wide range of word order patterns, including somewhat marked ones.

Finally, given the proposed clausal architecture, it is predicted that there exists a word order that utilizes all Specs available in the left periphery. This prediction is indeed borne out. Consider (29).

(29) Þa-V-Object Pronoun-Subject NP
\[
\text{þa axodon hine Pharisei & Þa boceras}
\]

\text{‘Then the Pharisees and scribes asked him’}

(Mk (WSCp) 7.5/Fischer et al. (2000: 115))

In this example, an object pronoun intervenes between the finite verb and the subject NP. The structure can be represented as follows:

(30) \[
[\text{TopP Þa Top}^u \text{[FocP Op axodon [TopP hine Top}^l \text{[FinP Fin [TP Pharisei & Þa boceras T]]]}])
\]

The conjunctive adverb Þa, the null operator, the object pronoun, and the subject all fit into the designated Specs; in addition, the finite verb is locat-

\textsuperscript{11} Here, it might well be the case that the topic element occupies Spec-Top\textsuperscript{u}.
ed in the head Foc, as predicted. Thus, this example lends further support to the proposed clause structure.\textsuperscript{12}

4.2. Inflectional Paradigm and V2

Now that we have established the clause structure of OE and EME, we shall proceed to its interaction with verbal inflection that drives V2 movement. In the above analysis of word order patterns, the finite verb raises to Fin “by default” and in the operator-initial constructions, it further raises to Foc. We have already provided an explanation of the latter movement with recourse to the Focus Criterion. In what follows, we will term a verbal inflection with a distinctive number agreement morpheme as \textit{extraordinarily rich agreement}, and consider why extraordinarily rich agreement drives V-to-Fin movement.

4.2.1. Derivation of Verbal Inflection

We shall first consider the mechanism for deriving verbal inflectional morphology. As pointed out in section 2, one of the problems with Bobaljik’s (2002) structural approach to the RAH is that it crucially draws on the adjacency requirement for the purpose of feature-checking, which is no longer necessary under the Agree-based system. Then, we attempt to derive the rich agreement effect from other independent principles. The relevant conceptions are summarized as follows:

\begin{equation}
(31) \ a. \ \textit{Dependency}: \text{A functional head that realizes some inflectional feature suffixes to a verbal root either through syntactic head movement or morphological merger at the phonological com-}
\end{equation}

\textsuperscript{12} In OE, especially in the works of Ælfric, the verb first (V1) word order as illustrated in (i) can be found, where the adverb \textit{þa} follows the finite verb.

(i) Ongann \textit{þa} Augustinus mid his munecum to geefenlæcenne þære apostola
began then Augustine with his monks to emulate the apostles’
life
‘Augustine then began with his monks to emulate the lives of the apostles’
\textit{(ÆCHom II, 9.78.205/Los (2005: 92))}

Based on the fact that the V1 construction often heads paragraphs in edited texts, Los (2005: 93) argues that this construction announces a discontinuity in the progression of the narrative events. A detailed analysis of the V1 order is not our main concern here, but we can tentatively assume that the left periphery of the above sentence has the following structure:

(ii) [\textit{ForceP ongann} [\textit{TopP \textit{þa Top}}] [\textit{FocP Foc} [\textit{TopP Top} [\textit{FinP Fin} [\textit{TP Augustinus T}]]]]]

The finite verb has raised to the head of ForceP for some reason or other and overtly marks the discourse boundary.
ponent.

b. *Cyclicity*: Both head movement and morphological merger obey strict cyclicity.

c. *Adjacency*: Morphological merger is subject to adjacency; a functional head can form a morphological amalgam only with a neighboring head.

I shall explicate these notions in further detail. An affix must be dependent on a verbal root to satisfy the Stranded Affix Filter formulated by Lasnik (1981):

\[(32)\] The Stranded Affix Filter
A morphologically realized affix must be a syntactic dependent of a morphologically realized category, at surface structure.

(Lasnik (1981: 164))

With respect to strict cyclicity, we adopt the formulation by Radford (2004):

\[(33)\] The Strict Cyclicity Principle
At a stage of derivation where a given projection HP is being cycled/processed, only operations affecting the head H of HP and some other constituent of HP can apply. (Radford (2004: 173))

Finally, following Embick and Noyer (2001), we consider morphological merger to be a lowering operation that is applied at the phonological component under the following hierarchical structure before the phonological realization of terminal nodes takes place:

\[(34)\] Lowering of $X^0$ to $Y^0$
\[
[XP \ X^0 \ ... \ [YP \ ... \ Y^0 \ ... ]] \Rightarrow [XP \ ... \ [YP \ ... \ [Y^0 \ Y^0+X^0] \ ... ]], \text{ where } Y \text{ is the head of the complement of } X
\]

(Embick and Noyer (2001: 561))

This yields the adjacency effect between the two terminal nodes that undergo morphological merger.

With these assumptions in mind, we shall investigate how the rich agreement effect manifests itself in languages with rich agreement in the sense suggested by Bobaljik, i.e. those languages where tense and agreement morphemes are carried by distinct functional categories. Suppose that the derivation of a sentence has reached the stage in (35).\(^{13}\)

\[(35)\] $[TP \ Subj_{[3,pl.]} \ T_{[past]} \ [vP \ t_{Subj.} \ V^+V \ [vP \ t_V]]]

\(^{13}\) The subject-raising to Spec-T is triggered by the EPP feature on T. The present analysis is a slight departure from the framework of Chomsky (2000, 2001), where the EPP is dependent on the Agree relation between uninterpretable φ-features (uφ) and the subject, which is not the case in (35). Alternatively, it might be the case that the
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Here, T and the subject have interpretable tense and φ-features, respectively. There are two possible options for the next step of the derivation: head movement of V+v to T or the merger of a functional category (termed as X for now) with uninterpretable φ-features (uφ). If the former option is chosen, the subsequent derivation proceeds as follows:

(36) a. head movement of V+v to T
   \[
   [\text{TP Subj}_3 \text{[vP tV+v [vP tV]]}]
   \]

b. merger of X with uφ
   \[
   [\text{XP X}_3 \text{[vP tV+v [vP tV]]}]
   \]

c. valuation via Agree
   \[
   [\text{XP X}_3 \text{[vP tV+v [vP tV]]}]
   \]

d. transfer to the phonological component
   \[
   [\text{XP X}_3 \text{[vP tV+v [vP tV]]}]
   \]

e. morphological merger of X onto the verbal complex
   \[
   [\text{XP X}_3 \text{[vP tV+v [vP tV]]}]
   \]

f. phonological realization
   \[
   [\text{XP X}_3 \text{[vP tV+v [vP tV]]}]
   \]

After V+v raises to T, the head X with uφ is introduced into the structure via Merge. Then, X acts as a probe and seeks a corresponding goal within its c-command domain; consequently, the values of the φ-features on the subject are copied onto X via Agree, as in (36c). After the output of syntax is transferred to the phonological component, X undergoes morphological merger to adjoin to T, and the resultant verbal complex is phonologically realized, as illustrated in (36e, f). It is essential to note that this derivation does not violate any of the abovementioned constraints. The head movement in (36a) and the morphological merger in (36e) both conform to the Strict Cyclicity Principle in (33), because these operations affect the heads T and X, respectively, whose maximal projections are being cycled/processed at the relevant stages of the derivation. Moreover, the morphological merger in (36e) satisfies the adjacency requirement, since X is lowered onto the head of its complement, i.e. T, in accordance with the structural schema in (34). 14

subject-raising in question takes place in a later stage of the derivation where uφ is introduced into the structure (Chomsky (2007, 2008)).

14 If, instead, the verbal complex raises to the head X via syntactic head movement, the adjacency between the verbal root and its inflections would be trivially satisfied. However, it would then be incorrectly predicted that V-to-T movement is also freely available in poor-inflection languages where tense and agreement are expressed by a single functional category T. In light of the overwhelming tendency of poor-inflection languages to lack V-to-T movement, we assume, with much literature of DM, that if both head movement and morphological merger can satisfy the Stranded Affix Filter without
On the other hand, if the head X is immediately merged after the stage in (35), the continuation of the derivation would appear as follows:

(37)  
\[ \text{a. merger of X with } uφ \]  
\[ [XP \ X_{[uφ]} \ T_{[past]}\ T_{[past]}\ vP\ t_{Subj}.\ V+V\ [VP\ t_v]]] \]  
\[ \text{b. valuation via Agree} \]  
\[ [XP \ X_{[3.pl.]} \ T_{[past]}\ T_{[past]}\ vP\ t_{Subj}.\ V+V\ [VP\ t_v]]] \]  
\[ \text{c. transfer to the phonological component} \]  
\[ \text{d. morphological merger of X onto T} \]  
\[ [XP \ T_{[past]}\ T_{[past]}\ T_{[past]}\ vP\ t_{Subj}.\ V+V\ [VP\ t_v]]] \]  
\[ \text{e. morphological merger of T+X onto V+v} \]  
\[ *[XP \ T_{[past]}\ T_{[past]}\ vP\ t_{Subj}.\ V+V+T_{[past]}\ T_{[past]}\ X_{[3.pl.]}\ [VP\ t_v]]] \]  
\[ \text{f. phonological realization} \]  
\[ [XP \ T_{[past]}\ T_{[past]}\ vP\ t_{Subj}.\ Root-d-e\ [VP\ t_v]]] \]

This derivation does not employ syntactic head movement except for the one that forms the verbal root V+v. Thus, for the higher functional heads T and X to be suffixed to the verbal root, morphological merger must be applied twice at the phonological component. X first lowers to adjoin to T and then the resultant complex head further lowers onto the verbal root, as illustrated in (37d, e). The first operation that adjoins X to T conforms to the Strict Cyclicity Principle, since it targets the head of XP that is being cycled/processed at the phonological component. However, the second operation that adjoins T+X to the root is clearly counter-cyclic, given that morphological operations at the phonological component apply in a bottom-up fashion. This is because the operation in question neither affects the head X of XP nor any other constituents of XP although the derivation has already reached the XP cycle.\(^{15}\) It follows that in languages where more than one functional category participates in verbal inflection, the finite verb must raise to the category immediately below the highest one that bears a relevant inflectional feature (in this case, T) via syntactic head movement, as in (36). Thus, the rich agreement effect is derived from the independent principles on dependency, cyclicity, and adjacency concerning the derivation violate the adjacency requirement, morphological merger, but not syntactic head movement, is chosen as the preferred option. This might be because syntactic head movement requires some strong feature as its driving force, whereas morphological merger comes “for free.”

\(^{15}\) Another potential derivation is the morphological merger of T onto V+v followed by the additional morphological merger of X onto V+v+T. However, the latter operation inevitably violates the adjacency requirement on morphological merger, which essentially requires that a head lower to the head of its complement (see (34) in the text).
of verbal inflection.

### 4.2.2. Morphological Structure of Verbal Inflection

Next, we shall consider how the amalgam consisting of a verbal root and its inflections is formed at the morphological level. As a general statement, one of the fundamental tenets of DM is anti-lexicalism, which maintains that words are products of, not materials for, syntactic computation (Harley and Noyer (1999), Embick and Noyer (2001)). This implies that a root could be accompanied by as many affixes as the number of times it undergoes head movement and/or morphological merger. However, a difficulty arises for verbal inflection, since there is generally an upper limit on the number of inflectional morphemes that can attach to a root. In the case of languages with ordinarily or extraordinarily rich agreement, a verbal root can accommodate at most two morphemes. Then, we shall assume that when the verbalizer $v$ is thrown into syntax, it is equipped with empty morphological slots, as represented in (38), to which features of functional heads are copied.16

\begin{equation}
(38)
\begin{array}{c}
\text{v} \\
\text{v} [ ] \\
\text{v} [ ] \\
\text{v} [ ] \\
\text{V} \quad \text{v} \\
\text{V} \quad \text{v}
\end{array}
\end{equation}

Suppose that when this $v$ raises to $T$ via head movement (see (36a)), the tense feature of $T$ is copied onto the inner slot of $v$.

\begin{equation}
(39)
\begin{array}{c}
\text{T} \\
\text{v} [ ] \\
\text{v} [ ] \\
\text{v} [ ] \\
\text{V} \quad \text{v} \\
\text{V} \quad \text{v}
\end{array}
\end{equation}

Subsequently, when a higher functional category $X$ that bears agreement lowers to $T$ via morphological merger (see (36e)), the $\phi$-features of $X$ are copied into its $\phi$-features.

\begin{equation}
\begin{array}{c}
\text{T} [\text{past}] \\
\text{v} [ ] \\
\text{v} [ ] \\
\text{v} [ ] \\
\text{V} \quad \text{v} \\
\text{V} \quad \text{v}
\end{array}
\end{equation}

---

16 Halle and Marantz (1993) put forward a similar proposal in line with the strong lexicalist hypothesis adopted in Chomsky (1993).
copied onto the outer slot of v.

(40)

The tense and agreement features are finally realized within the v⁰ complex in accordance with the correspondence rules that specify the phonological forms for the respective values of the relevant syntactic features. This is the scenario we assume for the amalgamation of a verbal root and its inflections.

Importantly, the number of morphological slots that v carries reflects language-specific restrictions on inflectional morphology, which, in principle, does not have direct bearings on the composition of functional categories. Thus, it is possible for the number of functional heads that participate in verbal inflection to exceed that of morphological slots. Suppose that the person and number features are borne by distinct functional categories X and Y, as illustrated in (41).

(41) \[
\text{YP Y[\text{number}] [XP X[\text{person}] [TP T[\text{tense}] \[vP v \[\text{VP V}]\]]]}
\]

In this case, the verbal complex must raise to X through successive head movement; otherwise, the Strict Cyclicity Principle or the adjacency requirement on morphological merger is violated at the phonological component, as discussed above (see also note 15). At the time the verbal complex has raised to X, the two slots are already occupied by the tense and person features. Subsequently, the structure is transferred to the phonological component and the higher functional head Y lowers onto X via morphological merger. When the two morphological slots within v⁰ and the head Y are phonologically realized, we obtain (42).
The plural morpheme on Y causes a violation of the Stranded Affix Filter if it is left behind the verbal complex. Then, I propose that the offending affix on Y overwrites the outer morphological slot of v as the last resort to evade the filter, as illustrated in (42). On the basis of the plausible assumption that one morphological slot can host only one morpheme, it follows that the person morpheme that is overwritten by the number morpheme is not overtly realized and only the latter is finally pronounced.

An empirical advantage of the analysis presented here is that it can naturally account for the characteristic pattern of verbal inflectional paradigms observed in languages with extraordinarily rich agreement in terms of overwriting. Consider the typical verbal inflectional paradigm with extraordinarily rich agreement in ME.

(43) Verbal inflectional paradigm with extraordinarily rich agreement

<table>
<thead>
<tr>
<th></th>
<th>present</th>
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<th>past</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>singular</td>
<td>plural</td>
<td>singular</td>
<td>plural</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>-e</td>
<td>-en</td>
<td>-de</td>
<td>-den</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-st</td>
<td>-en</td>
<td>-dst</td>
<td>-den</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>-th</td>
<td>-en</td>
<td>-de</td>
<td>-den</td>
<td></td>
</tr>
</tbody>
</table>

A notable characteristic of this paradigm is that person is distinguished only in the singular number in the both present and past tenses. All verbal inflections of V2 texts in section 3.2 share this property. The relevant correspondence rules that are necessary to derive the paradigm in (43) can be listed as follows:
Note that this list does not include any rule that specifies the phonological form of the singular number. Crucially, the absence of phonological realizations is different from zero realization as depicted in (44a), in that only the latter is subject to the Stranded Affix Filter, which essentially requires a morphologically realized affix to be a syntactic dependent (see (32) above). In the present system, when the derivation at the phonological component has reached the stage in (42) and the number feature is valued as [singular], it is not phonologically realized and thus need not be incorporated into the verbal root. In this case, the person feature in the outer morphological slot of v is intact. On the other hand, if the number feature is valued as [plural], it is realized as -en and overwrites the person feature, as in (42).

Thus, the hypothesis proposed here can provide a principled structural explanation for the seemingly arbitrary pattern of verbal inflectional paradigms peculiar to languages with extraordinarily rich agreement. The relevant paradigm makes person distinctions only in the singular but not in the plural because the person and number features are borne by distinct functional categories and the number morpheme overwrites a person morpheme when the number feature is valued as [plural] in the higher category. To the extent that this explanation holds true, we have independent evidence for the distribution of inflectional features assumed in (41) above.

Note that the verbal complex raises to X even when the head Y is valued as [singular] and assigned no phonological form, which renders the adjacency between the verbal complex and Y unnecessary. This is because at the stage of the derivation where the verbal complex should decide whether it raises to X or not, it cannot anticipate whether the number feature on Y is later valued as [plural] or as [singular], i.e., whether or not Y is later assigned a phonological form. In other words, the presence of a distinct number agreement morpheme in a given language does not trigger verb movement in particular derivations; it would be more precise to say that a number morpheme triggers the acquisition of a so-called strong feature on X that drives syntactic head movement.
4.2.3. Tying Up the Loose Ends: Deriving the Rich Agreement Effect on V2

We are now in a position to derive the rich agreement effect on V2 in the history of English. The only additional assumption necessary to relate the extraordinarily rich agreement morphology with the availability of V2 is (45).

(45) In languages with extraordinarily rich agreement, the person and number features are located in Fin and Top₁, respectively. This amounts to saying that the functional categories that have been referred to as X and Y up to this point correspond to Fin and Top₁ in the fine structure of the left periphery, on which we base our analysis of the word order patterns of early English.

Assigning the inflectional features to the phrase structure proposed in section 4.1, we can delineate the relevant part of the structure as in (46).

(46) Languages with extraordinarily rich agreement

The verbal root must raise to Fin in order to pick up the person feature via syntactic head movement. If it raises no higher than to T, it will lead to a violation of the adjacency requirement imposed on affixation because Top₁ with the number feature will be too far afield from the verbal complex due to the intervening Fin head; alternatively, it would be necessary to apply morphological merger twice to incorporate Top₁ into the verbal complex, which inevitably yields illicit counter-cyclic derivation at the phonological component (see the discussion in section 4.2.1). In either case, the derivation will crash. Thus, in languages with extraordinarily rich agreement morphology, the finite verb obligatorily raises to Fin across the subject NP.
in Spec-T, deriving the word order in which the verb appears to the left of the subject NP.\textsuperscript{18}

The next question pertains to why V2 was lost in English. It has been revealed in section 3.2 that the ME texts that preserve the plural morpheme exhibit the topic-V-subject NP order, whereas those that have undergone the decline of the plural morpheme have lost this order as well. The verbal inflectional paradigm in which the plural \textit{-en} has declined to \textit{-e} is presented below:

\begin{center}
\begin{tabular}{|c|c|c|c|c|}
\hline
 & present & & past & \\
\hline
singular & plural & & singular & plural \\
\hline
1 & -e & -e & -de & -de \\
2 & -st & -e & -dst & -de \\
3 & -th & -e & -de & -de \\
\hline
\end{tabular}
\end{center}

Under the framework of DM, morphological decline can be adequately captured as a modification in the relevant correspondence rule(s). If we replace the phonological form that corresponds to the [plural] feature in (44) with /-e/, we obtain the following list of rules for agreement (the rules for tense morphology are omitted):

\begin{center}
(48) a. /-e/ \iff [1st person] \\
b. /-st/ \iff [2nd person] \\
c. /-th/ \iff [3rd person]/[present] \\
d. /-e/ \iff [3rd person]/[past] \\
e. /-e/ \iff [plural] \\
\end{center}

As is clear from this list, the new phonological form /-e/ is not a morpheme

\textsuperscript{18} In section 4.1, we have proposed that subject pronouns appear in Spec-Top\textsuperscript{1} as a type of topic. However, given the structure in (46), we can provide an alternative analysis by assuming that pronouns, being pure bundles of Case and \(\varphi\)-features, must be licensed via Spec-head relation with the highest functional head that hosts a verbal agreement feature; in (46), the relevant head is Top\textsuperscript{1}. Under this alternative analysis, the feature that triggers topic-movement to Spec-Top\textsuperscript{1}, say [+Top], does not need to be activated for subject pronouns. Thus, it follows that subject pronouns do not always serve as a topic, which is particularly evident in the case of expletive \textit{hit}. In addition, if we assume that verb movement into Foc is blocked by Top\textsuperscript{1} only when Top\textsuperscript{1} is specified as [+Top], we can correctly rule out the focus-V-topic order (see note 10) while ruling in the \textit{wh/\textit{ne/pa}-V-subject pronoun order (see (22) and (24) in the text). Furthermore, together with the rather plausible assumption that verbal tense and agreement features are all borne by T in PE (see also section 6), the alternative analysis naturally accounts for why subject pronouns have come to occupy the same Spec position as subject NPs, i.e. Spec-T, in PE.
that exclusively expresses plural agreement. The same form is also employed as the first person agreement and the third person agreement in the past tense. Suppose that the person and number features are carried by distinct functional categories, as has been assumed above, and that the value of the person feature is [1st person] or [3rd person] in the environment of the past tense and the number feature is valued as [plural]. Then, the same phonological form /-e/ would appear on the outer morphological slot of v and the head Top¹ simultaneously, and the one on Top¹ would overwrite the one occupying the outer slot of v, without any phonological effects (see (42)). It seems rather reasonable to conjecture that in order to avoid such a redundant operation, the person and number features came to be carried by a single functional category, and accordingly, the correspondence rules were also reorganized in the manner illustrated below. In (49), only /-st/ and /-th/ are specified for their corresponding morphosyntactic features, and /-e/ is specified as the elsewhere condition, i.e. as the morpheme that is inserted in all relevant terminal nodes except the ones with the features in (49a, b).

\[(49)\]
\[\begin{align*}
\text{a. /-st/} & \quad \leftrightarrow \quad \text{[2nd person, singular]} \\
\text{b. /-th/} & \quad \leftrightarrow \quad \text{[3rd person, singular]/[present]} \\
\text{c. /-e/} & \quad \leftrightarrow \quad \text{elsewhere}
\end{align*}\]

Note that the five correspondence rules in (48) are reduced to three in (49), where a single phonological form is specified with respect to both person and number features. I propose that the distribution of agreement features changed from (46) to (50) in light of the general tendency of grammar to favor simpler forms (Roberts and Roussou (2003), van Gelderen (2004)).

\[(50)\] Languages with ordinarily rich agreement

```
Top¹P
   \|--
   \|   
topic

Top¹  FinP
   \|--
Fin[person, number]   TP

[person, number]  subject

T[tense]   vP

V
```
Given that the change in question was caused by the decline of the number morpheme, it can be safely supposed that the number feature formerly carried by Top\(^1\) fused into Fin, which came to serve as the category responsible for verbal agreement.\(^{19}\) In this case, V-to-T movement will suffice to satisfy the requirements concerning the cyclicity of derivation and the adjacency between a verbal root and its inflectional affixes. By virtue of the preference for morphological merger over syntactic head movement in cases where both lead to convergence (see note 14), V ceased to raise as far as Fin, and thus the topic-V-subject order became obsolete. This completes our analysis of the rich agreement effect on V2 movement.

5. Further Issues

Here, recall again that the RAH approach to V2 movement is challenged by the following apparent counterexamples: (i) the residual V2 in PE, (ii) the embedded verb-final order, and (iii) mainland Scandinavian V2. Of these, (i) is now trivial. In PE, the V2 word order is restricted to constructions in which the sentence-initial element receives focus interpretation, including wh-interrogative and negative inversion constructions. We have argued above that in such cases, verb movement is triggered by the Focus Criterion; thus, the RAH has no direct bearings on this type of movement. In what follows, it will be shown that the phenomena of (ii) and (iii) are also compatible with our RAH approach to V2.

5.1. Verb Final in Embedded Clauses

The description of the complete range of word order varieties in embedded clauses in early English falls outside the scope of this paper. Our modest goal here is to point out that the verb-final order as in (51), which is commonly observed in embedded clauses in Germanic V2 languages, is not incompatible with our claim that the finite verb raises to Fin.

\(^{19}\) Note that the feature geometries in (46) and (50) conform to Chomsky’s (2007, 2008) proposal that agreement features originate in the C-domain. Contra Chomsky, however, agreement features do not percolate down to T in the present model, at least for languages with rich agreement. It awaits further research to see if there are any conceptual grounds for the distribution of agreement features in (46) and (50) and the inherent properties of Top\(^1\) and Fin.
(51) siððan he papanhad underfeng
after he papal-office received
‘after he received the papal office’

(ÆCHom II, 9.77.164/Fischer et al. (2000: 57))

The basic idea is that the remnant large-scale XP movement à la Kayne (1994) is available in embedded clauses. Suppose that a series of head movements and a large-scale XP movement are applied in the following sequence:

(52) a. head movement of V+v to T
    \[
    \text{TP Subj. } V+v+T \left[ vP \ t_{\text{Subj.}} \ t_{V+v} \left[ VP \ t_V \ \text{Obj.}\right]\right]
    \]

b. merger of Fin and head movement of V+v+T to Fin
    \[
    \text{FinP } V+v+T+\text{Fin} \left[ \text{TP Subj. } t_{V+v+T} \left[ vP \ t_{\text{Subj.}} \ t_{V+v} \left[ VP \ t_V \ \text{Obj.}\right]\right]\right]
    \]

c. merger of Top¹ and remnant movement of TP to Spec-Top¹
    \[
    \text{TopP } \left[ \text{TP Subj. } t_{V+v+T} \left[ vP \ t_{\text{Subj.}} \ t_{V+v} \left[ VP \ t_V \ \text{Obj.}\right]\right]\right] \text{ToP}^1 \left[ \text{FinP } V+v+T+\text{Fin} \ t_{\text{TP}}\right]
    \]

With subsequent applications of external Merge, we obtain the structure in (53).

(53)

Here, the verb has raised to Fin, and at the same time, it appears at the final position of the clause (see Biberauer and Roberts (2005) for a detailed discussion of word order variations in embedded clauses in terms of large-scale XP movement).

The following question then arises: Why is the derivation through large-scale XP movement available only in embedded clauses? In particular, what is the motivation for TP-movement to Spec-Top¹ in (52c)? The key lies in
the general absence of topicalization in embedded clauses. Since topicalization is a typical root phenomenon, the function of Top must be suppressed in some way or other in embedded clauses. I claim that large-scale XP movement is one such way. Kayne (1994: 52–54) accounts for the absence of overt wh-movement in (consistently head-final) SOV languages in terms of large-scale XP movement, arguing that wh-phrases cannot move to Spec-C because this position is already occupied by the raised TP. The same reasoning would hold true for the ban on topicalization in embedded clauses. In (52c) above, Spec-Top\textsuperscript{1} is occupied by the raised TP, which prevents other elements from moving to the same position. If this analysis is on the right track, large-scale XP movement to Spec-Top\textsuperscript{1} is not only available but also obligatory in embedded clauses in order to block topicalization therein.\textsuperscript{20}

5.2. Other Germanic Languages
Finally, we shall investigate whether the correlation between the richness of agreement and availability of V2 movement is observed in other Germanic languages as well. Consider the inflectional paradigms of German, Dutch, and Icelandic, which are summarized in (54).

\[\text{\textsuperscript{20} The subsequent movement of TP to Spec-Top\textsuperscript{u} would also suppress the function of Top\textsuperscript{u}. Alternatively, it might be the case that Top\textsuperscript{u} is simply absent in embedded clauses. We do not pursue this matter any further. Incidentally, as anonymous reviewers point out, topicalization and the V2 word order is readily found in the complement clause of a bridge verb, i.e. a verb of saying or thinking:}
\]
\[(i) \text{Gregorius se trahtnere cwæð þæt fœrði wolde drihten getrahtnian}
\]
\[\text{Gregory the interpreter said that therefore wanted God interpret}
\]
\[\text{þurh hine sylfne þæt bigspel ðe}
\]
\[\text{through himself the parable that}
\]
\[\text{‘Gregory the interpreter said that therefore God wanted to interpret himself the parable that…’} \quad (\textit{ECHom} \text{II, 6.53.33/Fischer \textit{et al.} (2000: 116))}
\]

In this case, the embedded clause expresses indirect speech. Accordingly, it retains the discourse-related functions of the original speech and thus exhibits familiar root phenomena including topicalization and V2. Note that the essence of the analysis in the text is that the verb-final order and the absence of topicalization are correlated via large-scale XP movement to Spec-Top; it does not preclude the possibility of embedded topicalization and the V2 order in cases as in (i).
German and Dutch have distinctive plural agreement morphemes, i.e. -en and -et in German and -en in Dutch. Thus, they are clearly qualified as extraordinarily rich agreement languages in much the same way as the V2 texts in ME. Icelandic also belongs to this class, although in a somewhat different manner. Note that in the Icelandic inflectional paradigm, person is fully distinguished only in the plural number in both the present and past tenses, whereas the singular forms have distinctive number agreement morphemes, i.e. -r, -i, and -ir. This strongly suggests that unlike in German, Dutch, and OE/ME, where the plural form is phonologically realized, in Icelandic, only the [singular] value of the number feature has corresponding phonological forms. Thus, when the number feature is valued as [singular], it overwrites the person morpheme in the morphological slot of v; on the other hand, when it is valued as [plural], the phonological forms that realize the person feature directly surface. In any case, it can be safely concluded that these languages fall under the generalization that languages with distinctive number agreement have V2 movement.

In contrast, Swedish, Norwegian, and Danish pose an apparent problem for the present analysis. Consider their inflectional paradigms in (55).
(55) Verbal inflectional paradigms of Swedish, Norwegian, and Danish

<table>
<thead>
<tr>
<th></th>
<th>Swedish</th>
<th></th>
<th>Norwegian</th>
<th></th>
<th>Danish</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>past</td>
<td>present</td>
<td>past</td>
<td>present</td>
<td>past</td>
</tr>
<tr>
<td>sg.</td>
<td>1</td>
<td>-ar</td>
<td>-ade</td>
<td>-er</td>
<td>-et</td>
<td>-er</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-ar</td>
<td>-ade</td>
<td>-er</td>
<td>-et</td>
<td>-er</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-ar</td>
<td>-ade</td>
<td>-er</td>
<td>-et</td>
<td>-er</td>
</tr>
<tr>
<td>pl.</td>
<td>1</td>
<td>-ar</td>
<td>-ade</td>
<td>-er</td>
<td>-et</td>
<td>-er</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-ar</td>
<td>-ade</td>
<td>-er</td>
<td>-et</td>
<td>-er</td>
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<tr>
<td></td>
<td>3</td>
<td>-ar</td>
<td>-ade</td>
<td>-er</td>
<td>-et</td>
<td>-er</td>
</tr>
</tbody>
</table>

As is evident from these paradigms, these languages lack agreement morphology altogether. Thus, it appears that our RAH approach fails to account for the presence of V2 movement in these languages.

Recall, however, that the V2 order can be derived through either of the following two types of movement: morphologically-driven V-to-Fin movement and V-to-Foc movement to satisfy the Focus Criterion. It may well be the case that mainland Scandinavian V2 is derived by the latter. In this regard, it is interesting to note that some texts written in the Northern dialect of ME exhibit a flat agreement similar to that in mainland Scandinavian languages. The verbal inflectional paradigm of Northern Prose Rule of St. Benet is presented in (56) below:

(56) Verbal inflectional paradigm of Northern Prose Rule of St. Benet

<table>
<thead>
<tr>
<th></th>
<th>present</th>
<th>plural</th>
<th>present</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-Ø</td>
<td>-es/-is</td>
<td>-ed/-t(e)</td>
<td>-ed/-t(e)</td>
</tr>
<tr>
<td>2</td>
<td>-es/-is</td>
<td>-es/-is</td>
<td>-ed/-t(e)</td>
<td>-ed/-t(e)</td>
</tr>
<tr>
<td>3</td>
<td>-es/-is</td>
<td>-es/-is</td>
<td>-ed/-t(e)</td>
<td>-ed/-t(e)</td>
</tr>
</tbody>
</table>

According to the survey conducted by Kroch and Taylor (1997), Benet exhibits a rigid V2 word order in main clauses, i.e., the finite verb precedes the subject irrespective of whether it is a noun phrase or a pronoun. An example of V2 with a subject pronoun is provided in (57).

(57) now will I blinne to speke of þaim, now will I cease to speak of them (Benet 4.32–33)

Given that subject pronouns in ME occupy Spec-ToP, as discussed in section 4.1, the relevant part of the structure of (57) can be represented as follows:
This is precisely the same structure as that of the þa-initial construction in the Midland and Southern dialects, which is characterized by the topic element in Spec-Top*, the corresponding null operator in Spec-Foc, and the finite verb that has raised to Foc by virtue of the Focus Criterion. This indicates that while the null operator can cooccur only with þa in the Midland and Southern dialects, it generally cooccurs with any topic element in Spec-Top* in the Northern dialect. How does this difference arise? Kroch and Taylor (1997) suggest that the grammar of the Northern dialect was strongly influenced by Old Norse through language contact. If the topic construction involving general null operator movement and the V-to-Foc movement originates from Old Norse, then it is rather reasonable to speculate that the same construction is also available in the descendants of Old Norse: Swedish, Norwegian, and Danish.

6. Conclusion

I shall conclude this paper by recapitulating the findings concerning the relevance of verbal inflection to V2 movement. First, there are two types of verb movement into the traditional C-domain, i.e. V-to-Foc movement and V-to-Fin movement, and only the latter is sensitive to verbal agreement. Second, the correlations between the richness of verbal inflectional morphology and the distance of verb movement can be summarized as follows: (i) in languages where tense, person, and number are carried by three distinct functional categories, V obligatorily raises to Fin; (ii) in languages where tense and agreement, including both person and number, are carried by two distinct functional categories, V obligatorily raises to T but not to Fin; (iii) in languages where tense, person, and number are carried by a single functional category, V moves no higher than to v. Although we have not discussed (iii) in much detail, it comes as a natural consequence of our analysis based on the RAH.

It should be emphasized again that the historical data of English have

21 In LME, the Scandinavian-type V2 in the Northern dialect began to decline, possibly due to the influence of the Midland dialect. The prose writings of Richard Rolle (see section 3.2) are among the earliest texts in which we can clearly see the decline of V2 (Fischer et al. (2000: 132)). Nevertheless, as mentioned in note 5, Richard Rolle exhibits relatively high frequency of the V2 order compared with the texts written in later periods. This may well be a residual effect of the old Scandinavian-type V2.
played a key role in revealing these findings, which can hardly be obtained through the investigation of other Germanic languages alone. The significance of the diachronic data is twofold. First, we could distinguish between the two types of V2 movement by inspecting the word order patterns in main clauses in early English by means of the fine structure of the left periphery. Second, English experienced the decline of verbal inflection and the loss of verb movement simultaneously; it exemplifies all the stages of (i)–(iii) mentioned above in its history. We have focused on the shift from (i) to (ii), i.e. the loss of V2 as a change caused by the decline of verbal inflection, which has received less attention in the literature of the RAH than the loss of V-to-T movement. Thus, to the extent that our attempt in this paper is successful, we can say that it will count as an example that demonstrates that diachronic research contributes to the explication of UG as well as the development of the theory for synchronic variation.

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